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Science fair students could be tomorrow's top materials researchers

by Pete Meltzer Jr., Materials and Manufacturing Directorate

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Eight aspiring young scientists from the Greater Dayton area took part in this year's High School Science Fair Student Summer Hire Program at the Air Force Research Laboratory's Materials and Manufacturing Directorate.

Under this program, students participating in the annual regional high school science fair are offered an opportunity to apply for summer work positions at AFRL. The fair attracts numerous students from various schools throughout the Dayton area. This year, the fair was held at Central State University in Wilberforce. Twelve science fair students were selected for summer positions at AFRL.

ML's 2002 program was very successful, according to Denise Carr, ML's program administrator. Three students worked in the ML Directorate's Nonmetallic Materials Division (MLB); three were assigned to the Survivability and Sensor Materials Division (MLP); one student worked in the System Support Division (MLS); and one student was assigned to the Manufacturing Technology Division (MLM).

This year's participants were Joseph Arndts, Paul Arndts, Matthew Dexter, Molly Finn, Sara Hockenheimer, Alex Martin, Jennifer Petersen and Diane Walters. Their mentors included a number of ML scientists and engineers, to include Dr. Benji Maruyama, Dr. Ajit Roy, Dr. Ming-Yung Chen and Roland Watts from MLB; Dr. Gail Brown, Dr. Rand Biggers, Dr. Dean Evans and Dr. Jonathan Goldstein from MLP; Julius Brodbeck and 1st Lt. Alan Landis from MLS; and Dr. John Jones from MLM.

"The students get hands-on training and pick up work experience in the career fields they are interested in and this helps them make a decision: 'Is this really what I want to do?' One of the program's aims is to get the students excited and interested in science and engineering. We are definitely looking for the best and brightest students in the area, so when we find exceptionally good students, we encourage them to come back every summer or continue to work with us on a part-time basis throughout the school year as their schedule permits," Carr said.

Julius Brodbeck, right, of the Materials and Manufacturing Directorate's System Support Division shows Joseph Arndts how much electrostatic voltage is on his body with a meter and lighted display. (Air Force photo)

"This option is available throughout their high school and college careers. Hopefully, this will provide us the opportunity to hire them as government employees upon graduation," she explained.

"We are fortunate to have had these young scientists on board this summer," said Ellen Gregory, who heads up ML's human resources program. "We hope that regardless of

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whether or not they eventually join the government as scientists and engineers, their experiences here at ML have been enlightening, educationally motivating and personally rewarding."

Take the case of Joseph Arndts, who recently completed his third summer at ML, working through mid-September with Julius Brodbeck, a member of the ML System Support Division's Electrical and Electronic Materials Evaluation Team. Arndts has chalked up an impressive record of achievement in science fair competitions—even before he entered high school—and is bound for college, where he hopes to further his knowledge in science and computer technology.

Recruiting talented people is one of the primary objectives of ML's High School Science Fair Students Summer Hire Program, Carr admits. "We hope it (the program) is a good experience for them. A lot depends on the mentors. You have to have good mentors to teach the students; mentors who will lead them through the program; who will give them good projects."

"The first part of the summer, I worked in the failure analysis laboratory, where you see how well a specimen performs under stress tests," Arndts explained. "It's been very enlightening. ML is like a big puzzle and everybody has a piece of this puzzle. I like it. You get some great experience and it's really fun. You gain experience working in a laboratory, and learn how to act and what you can and can't do."

Arndts said the summer hire program has helped him improve his research skills and become more proficient in experiment setup and operation, and data acquisition and analysis.

Alex Martin, a senior at the Greene County Career Center, worked on laser experiments and helped build safety enclosures for them at ML's Laser Hardened Materials Evaluation Laboratory this summer. "I learned a lot about machining, being flexible on the job, and following a plan," he explained. "I found out that I do better work, if I take my time and do the job right—measure twice, cut once."

Has the experience of working alongside laboratory technicians, engineers and scientists made a lasting impression on him? Time will tell. For now, Martin says he appreciated the opportunity; enough so, that he has signed up for a course in engineering technology. "The work was fun and the people I worked with were great. I think I could do research and development work for the rest of my life." **@**